



PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁷ : C12N 15/20, A61K 48/00, A61P 31/12, 31/20</p>	<p>A3</p>	<p>(11) International Publication Number: WO 00/40273 (43) International Publication Date: 13 July 2000 (13.07.00)</p>
<p>(21) International Application Number: PCT/US99/30843 (22) International Filing Date: 28 December 1999 (28.12.99) (30) Priority Data: 60/115,403 8 January 1999 (08.01.99) US (71) Applicant (for all designated States except US): VICAL INCORPORATED [US/US]; Suite 100, 9373 Towne Centre Drive, San Diego, CA 92121 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): PARKER, Suezanne [US/US]; 12539 Cypress Woods Court, San Diego, CA 92131 (US). HORTON, Holly [US/US]; 11791B Spruce Run Drive, San Diego, CA 92131 (US). (74) Agents: STEFFE, Eric, K. et al.; Sterne, Kessler, Goldstein & Fox P.L.L.C., Suite 600, 1100 New York Avenue, N.W., Washington, DC 20005-3934 (US).</p>		<p>(81) Designated States: CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> (88) Date of publication of the international search report: 16 November 2000 (16.11.00)</p>
<p>(54) Title: TREATMENT OF VIRAL DISEASES USING AN INTERFERON OMEGA EXPRESSING POLYNUCLEOTIDE (57) Abstract The present invention provides a method of treating a viral disease comprising administering to a mammal a polynucleotide construct comprising a polynucleotide encoding IFNω. The polynucleotide construct of the present invention can be administered free from associated with transfection facilitating agents or as a complex with at least one or more cationic lipids.</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

INTERNATIONAL SEARCH REPORT

Int'l Application No

PCT/US 99/30843

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/20 A61K48/00 A61P31/12 A61P31/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal, MEDLINE, BIOSIS, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>EP 0 170 204 A (BOEHRINGER INGELHEIM INT) 5 February 1986 (1986-02-05) cited in the application page 3, line 6 -page 5, line 4 page 12, line 15 - line 24 page 34 -page 47; examples 1-5 page 53 -page 58; example 8 figure 11 page 32, line 15 - line 24 page 63, line 6 -page 64, line 15</p> <p style="text-align: center;">--- -/--</p>	1-32



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

8 August 2000

Date of mailing of the international search report

23/08/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Sitch, W

INTERNATIONAL SEARCH REPORT

In International Application No

PCT/US 99/30843

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>RAZ EYAL ET AL: "Systemic immunological effects of cytokine genes injected into skeletal muscle." PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES, vol. 90, no. 10, 1993, pages 4523-4527, XP002144215 1993 ISSN: 0027-8424 page 4523, 'Introduction' page 4525 - page 4526, 'Discussion'</p>	1-32
A	<p>WO 96 17063 A (VICAL INC) 6 June 1996 (1996-06-06) page 4, line 18 - line 24 page 5, line 33 - line 36 page 40, line 4 - line 21</p>	19-23
A	<p>DATABASE BIOSIS 'Online! BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 1994 KOKOREVA L N ET AL: "Clinico-morphological characterization and effectiveness of interferon therapy in patients with chronic hepatitis delta." Database accession no. PREV199497368940 XP002144216 abstract & ZHURNAL MIKROBIOLOGII EPIDEMIOLOGII I IMMUNOBIOLOGII, no. 1, 1994, pages 55-59, ISSN: 0372-9311</p>	26
A	<p>DATABASE BIOSIS 'Online! BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 17 December 1998 (1998-12-17) AULT A: "FDA approves two new hepatitis therapies." Database accession no. PREV199900076805 XP002144217 abstract & LANCET (NORTH AMERICAN EDITION), vol. 352, no. 9145, 17 December 1998 (1998-12-17), page 1996 ISSN: 0099-5355</p>	27-31

-/--

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/30843

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DATABASE BIOSIS 'Online! BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; October 1997 (1997-10) HUANG CHIU-CHING: "Hepatitis in patients with end-stage renal disease." Database accession no. PREV199800049222 XP002144218 abstract & JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY, vol. 12, no. 9-10, October 1997 (1997-10), pages S236-S241, ISSN: 0815-9319</p> <p>-----</p>	27-31

INTERNATIONAL SEARCH REPORT

Information on patent family members

In: International Application No

PCT/US 99/30843

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0170204	A	05-02-1986	DE 3428370 A	13-02-1986
			DE 3505060 A	14-08-1986
			AT 67786 T	15-10-1991
			AU 600653 B	23-08-1990
			AU 4554985 A	06-02-1986
			BG 60445 B	31-03-1995
			CA 1340184 A	15-12-1998
			DE 3584198 A	31-10-1991
			DK 346385 A	02-02-1986
			ES 545725 D	01-08-1986
			ES 8609475 A	16-12-1986
			ES 552431 D	01-09-1987
			ES 8708013 A	16-11-1987
			FI 852956 A,B,	02-02-1986
			GR 851866 A	02-12-1985
			HK 187896 A	18-10-1996
			HU 39477 A,B	29-09-1986
			IE 58942 B	01-12-1993
			IL 75963 A	25-05-1992
			JP 2566909 B	25-12-1996
			JP 61181381 A	14-08-1986
			JP 2567195 B	25-12-1996
			JP 6181771 A	05-07-1994
			KR 136799 B	25-04-1998
			MX 9203645 A	01-09-1992
			NO 177863 B	28-08-1995
			NZ 212937 A	27-08-1991
			PT 80901 A,B	01-09-1985
			SG 134394 G	13-01-1995
			SU 1523054 A	15-11-1989
			SU 1551251 A	15-03-1990
			ZA 8505759 A	29-04-1987
			SU 1572419 A	15-06-1990
WO 9617063	A	06-06-1996	US 5641665 A	24-06-1997
			EP 0795015 A	17-09-1997
			JP 10509877 T	29-09-1998